Stannopalladinite  

(Pd, Cu)$_3$Sn$_2$(?)

Crystal Data: Hexagonal.  

Point Group: n.d.  

As elongated and rounded cubic crystals up to 0.1 mm, intergrown with niggliite.  

Twinning: Occasionally exhibited polysynthetically.

Physical Properties:  

Hardness = n.d.  

VHN = 220–228; 387–452.  

D(meas.) = n.d.  

D(calc.) = n.d.

Optical Properties: Opaque.  

Color: Brown-rose, pale pink.  

Anisotropism: Strong, from lilac-red to gray-blue.

R$_1$–R$_2$: (460) 46.2–48.5, (500) 50.3–51.5, (540) 53.0–54.0, (580) 54.0–55.5, (620) 56.0–57.8, (660) 57.0–60.0, (700) 57.0–61.0

Cell Data:  

Space Group: n.d.  

a = 4.40  

c = 5.66  

Z = [1]

X-ray Powder Pattern: Synthetic Pd$_3$Sn$_2$. (JCPDS 4-801).

2.27 (100), 2.20 (100), 1.58 (70), 1.28 (70), 1.19 (70), 0.834 (70), 0.830 (70)

Chemistry:  

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pd</td>
<td>40.</td>
<td>58</td>
</tr>
<tr>
<td>Pt</td>
<td>15.</td>
<td>2</td>
</tr>
<tr>
<td>Fe</td>
<td>0.3</td>
<td>2.3</td>
</tr>
<tr>
<td>Sn</td>
<td>28.</td>
<td>38</td>
</tr>
<tr>
<td>Cu</td>
<td>5.</td>
<td>12</td>
</tr>
<tr>
<td>Ni</td>
<td>0.1</td>
<td>0.7</td>
</tr>
<tr>
<td>insol.</td>
<td>0.25 – 2.5</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td></td>
</tr>
</tbody>
</table>

(1) Noril’sk region (?), USSR; by electron microprobe, ranges of analyses.  

(2) Monchegorsk, USSR; by electron microprobe, average of analyses.

Occurrence: In sulfide Cu-Ni ores (Noril’sk region (?), USSR).

Association: Chalcopyrite, Pt-Fe alloy (Noril’sk region (?), USSR); niggliite, hessite, tellurides of Pt and Pd (Monchegorsk, USSR).

Distribution: Originally described from a locality thought to be in the Noril’sk region, and since described from the Taimyr mine, Talnakh area, of that region in western Siberia; the species later redefined from Monchegorsk, Kola Peninsula; also at the Ugol’nri Ruch’ placer, all in the USSR.

Name: For the composition.

Type Material: n.d.

References:  


